

Interactive comment on “Local tower-based merging of two land evaporation products” by Carlos Jiménez et al.

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This study has addressed the difficulties in merging different ET products – in particular when the spatial resolutions are vastly different – those of coarse grid (25 km) versus in-situ observations (which are fetch dependent). The detailed description of the methodologies and the analysis of results as well as the discussion are very helpful to help the reader understand the challenges in such undertaking. The conclusions are honestly drawn based on the results. On the basis of the above facts, I recommend the publication at HESS after some minor revision.

R. We thank the reviewer for taking his/her time to review our paper, and we are glad to see that he/she thinks that the paper is suitable for publication at HESS.

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Given the issues raised by the manuscript, which mentions issues like dependence of the products to be merged, the tower coverage, errors, and spatial representativeness of their measurements at the products resolution, and the nature of the ET product errors, I would suggest to use a more general title e.g. ‘On issues in local tower-based merging of land evaporation products’ or something similar. The current title is specific but I am not sure that the merged product is more useful than each of them individually and the true contribution of the study is to enlist and highlight these issues to the community.

R. We agree with the reviewer that the paper is more about the process of merging the products rather than about providing a successful merge product. Indeed, we do not claim that the merged product is a solid alternative to the individual products at this stage, though we hope that this will be the case when continuing this work with original estimates of finer resolution, derived with more independent forcings, and for more extended periods. We like the suggestion of the reviewer for a new title and we will change the title as suggested.

P8L24-25: I was not sure what ‘a station-averaged square temporal correlation of 0.96.’ – is this the coefficient of determination?

R. The 0.96 value was obtained by calculating first the Pearson correlation coefficient between the corrected and uncorrected fluxes at each station, squaring that value, and then averaging the individual station square correlations over all stations. We will rephrase as: “If the squared correlation coefficient between uncorrected and corrected fluxes is calculated at each station and then averaged over all stations, we obtain 0.96, showing that the uncorrected and corrected fluxes correlate very well in time.

P12L15: I was not sure what ‘the satellite surface meteorology’ refers to.

R. It refers to the inputs used by the ET models related to meteorological fields, in this case the surface radiation, the near-surface air temperature and humidity, and the precipitation. To make it clear we will rephrase as: “Bias can also be present between the

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surface meteorological products used by the evaporation models, such as the surface radiation, or the near-surface air temperature and humidity, or the precipitation, and the real meteorological conditions at the tower”.

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